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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,259

04/18/2006

Junko Kakegawa

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EXAMINER

LACLAIR, DARCY D

ART UNIT

PAPER NUMBER

1796

NOTIFICATION DATE

DELIVERY MODE

12/16/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/576,259	Applicant(s) KAKEGAWA, JUNKO	
	Examiner Darcy D. LaClair	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/28/08.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 7-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 7-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/28/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All outstanding rejections, except for those maintained below are withdrawn in light of the amendment filed on **8/28/2008**.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Upon reconsideration of the claims and an updated search, new grounds of rejection are set forth below were are not necessitated by applicant's amendment. Thus, *a 2nd non-final Office action is set forth as follows.*

In the Remarks, applicant indicates that **claims 19-31** have been added. It is noted that **Claims 19 and 20** were present in the prior listing of claims, and **claims 21-31** are not present in the case.

Claim Objections

2. **Claim 1** is objected to because it is not immediately clear which portions of the composition are encompassed by the term "consisting of" and which portions of the composition are encompassed by the term "comprising". It seems that the term "consisting of" encompasses the resin elements A1, A2, and B, and the term "comprising" encompasses the composition elements A1+A2+B (resin taken as one entity) and C (filler).

Claim 4 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper

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dependent form, or rewrite the claim(s) in independent form. The claim recites the limitation "comprises the epoxy resin in a part of the resin components not grafted on the crystalline inorganic filler in an amount from **0.1 to 20%** by weight." In **claim 1**, 100 parts by weight of resin components *consist of* 0.3 to 10 parts by weight of an epoxy resin. This is 0.3 to 10 percent by weight of resin. The language of claim 4 would constitute a broadening of this closed range.

Claim Rejections - 35 USC § 112

3. **Claims 4 and 10** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to Claim 4, it is unclear what the basis is for the amount of epoxy resin, i.e., is the amount of epoxy based on the total composition, only on the amount of resin, or only on the amount of resin not grafted to the inorganic filler.

Claim 10 recites the limitation "resin composition according to Claim 1, wherein the composition comprises a part of the resin components grafted on the crystalline inorganic filler and **on the glass fiber** in an amount from 0.01 to 5 parts by weight per 100 parts by weight of the crystalline inorganic filler **and the glass fiber**." There is insufficient antecedent basis for these limitations in the recited claims.

Claim Rejections - 35 USC § 103

4. **Claims 1, 3-4, 7-8, 10-11, 14-17, and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Maekawa (WO2002/090435)** in view of **Nakano et al. (US 5,302,645)** and **Kudou et al. (US 2002/0123570)**.

It is noted that the international Patent Application WO publication is being utilized for date purposes. However, since **WO 2002/090435** in Japanese, in the discussion below, the US equivalent for **WO 2002/090435**, namely **US 2004/0147635**, respectively, is referred to in the body of the rejection below. All column and line citations are to the US equivalent.

It is noted that **Claim 16** is presented in product by process format, and thus the process is not given patentable weight absent a showing of criticality.

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

With regard to Claim 1, Maekawa teaches a resin composition comprising polytrimethylene terephthalate and an inorganic filler, where the inorganic filler falls within the range from 5 to 70% by weight based on a total weight of the resin composition. (see abstract) The inorganic filler can be potassium titanate whiskers, wollastonite, (see par [0034]) kaolin, clay, calcium carbonate, and barium sulfate (see par [0037]) which are taught by applicant as crystalline inorganic fillers. (see applicant's specification p. 19 par [0019] - p. 20) Maekawa indicates that the type of inorganic filler is selected depending upon the purpose. (see par [0033]) Maekawa further indicates

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that a thermoplastic resin such as polycarbonate may be incorporated in the resin. (see par [0088]) Maekawa teaches a film forming agent for use as a surface treatment for the inorganic filler, (see par [0051]) and cites epoxy polymers as particularly preferred for economical and fatigue resistance reasons. (see par [0057]) Maekawa not discuss the particular purposes which would be addressed by various types of fibers, or the content of the epoxy resin or polycarbonate resin.

Kudou teaches that particle sizes and amounts depend on the uses and objects of the individual fillers. Inorganic fillers such as potassium titanate whiskers, wollastonite, calcium carbonate, talc and the like are particularly preferable to give good surface appearance and slidability to molded articles. (see par [0062], [0063]) It would be obvious to use these particular inorganic fillers in order to improve the surface properties of the molded article made from the composition of Maekawa.

Nakano teaches a polyethylene terephthalate composition, which is a similar alkylene terephthalate resin. For this composition, Nakano teaches 1 to 25 parts by weight of a bisphenol type epoxy resin and 5 to 50 parts of a thermoplastic resin. (see abstract) The combination of these components within specific ranges provides an extremely stable moldability. (see col 1 line 49-55) The thermoplastic resin is preferably polycarbonate (see col 2 line 58 - col 3 line 2) In the absence of a teaching from Maekawa with regard to the content of epoxy and polycarbonate, it would be obvious to one of ordinary skill in the art to consider amounts of these resins which were appropriate for use in a chemically similar terephthalate resin. Additionally, Nakano discloses guidance in formulating the resin. Specifically too little epoxy will have no

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effect, and too much epoxy will lead to molding flashes and unstable fluidity, and too little thermoplastic will have little effect and too much thermoplastic will lead to a reduction in mechanical strength. (see col 3 line 50-68) In that the content of epoxy, polycarbonate and filler constitutes results effective variables, it would be obvious to one of ordinary skill in the art to adjust the content of each of these components in order to achieve an amount most appropriate for the particular thermoplastic resin taught by Maekawa, depending on the final molded product. See MPEP § 2144.05 (B). Case law holds that “discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.” See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With regard to Claim 3, Maekawa teaches an amount of the grafting polytrimethylene terephthalate layer provided on the surface of the inorganic filler is from 0.1 to 2 parts by weight based on 100 parts by weight of the inorganic filler. (see par [0049])

With regard to Claim 4, Maekawa teaches film forming agents including epoxy polymers for carrying out the surface treatment of the filler, (see par [0051], [0057]) but does not disclose their use not grafted on the filler. Nakano discloses the use of epoxy as a component of the resin blend, for the purpose of improving moldability. (see col 1 line 49-55) The content of the epoxy is from 1 to 25 parts by weight, (see col 1 line 60) which substantially overlaps with applicant's claimed range. It would be obvious to include the epoxy of Nakano in the composition of Maekawa for this purpose, in addition to the epoxy already included as a surface treating agent.

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With regard to Claim 7 and 8, Maekawa teaches potassium titanate whiskers, **wollastonite**, (see par [0034]) kaolin, clay, calcium carbonate, and barium sulfate (see par [0037])

With regard to Claim 9, Maekawa teaches that the inorganic filler may be used singly or in a combination of two or more thereof, and that the combination of glass fiber and an inorganic fiber other than glass fiber is preferred because mechanical strength, dimensional accuracy, and electrical properties are provided at the same time. (see par [0041]) Maekawa does not disclose a ratio for the components of this combination. Kudou teaches that particle sizes and amounts depend on the uses and objects of the individual fillers. Inorganic fillers such as potassium titanate whiskers, wollastonite, calcium carbonate, talc and the like are particularly preferable to give good surface appearance and slidability to molded articles. (see par [0062], [0063]) Glass fibers, glass flakes, carbon fibers, and the like are particularly useful to give rigidity to molded articles. (see par [0064],[0065]) Therefore, the content of each filler is a result effective variable. In the examples of Kudou, wollastonite and carbon black are used in preference to glass fibers, which are not exemplified. (see par [0123]-[0125]) Further, it would be obvious to adjust the content of each type of filler to obtain a molded product with good mechanical properties as well as good surface appearance. See MPEP § 2144.05 (B). Case law holds that “discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.” See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With regard to Claim 10, Maekawa teaches an amount of the grafting polytrimethylene terephthalate layer provided on the surface of the inorganic filler is from 0.1 to 2 parts by weight based on 100 parts by weight of the inorganic filler. (see par [0049]) Maekawa discloses that the inorganic filler can comprise both crystalline fillers as well as glass fibers. (see par [0040])

With regard to Claim 11, Maekawa teaches that the intrinsic viscosity for the polytrimethylene terephthalate resin is preferably not less than 0.60, and most preferred to be not less than 0.70. (see par [0060])

With regard to Claim 14, Nakano teaches a bisphenol A type epoxy resin. (see col 2 line 50)

With regard to Claim 15, Nakano teaches the epoxy equivalent is preferably 1000 or less. (see col 2 line 53) This overlaps with applicant's claimed range.

With regard to Claim 16, Maekawa teaches that the mixture of polytrimethylene terephthalate, filler, and other additives may be melt kneaded, (see par [0089]) but does not disclose an order in which the components are blended. Nakano teaches that the composition is prepared by melting and using a conventional mixer and kneader. Furthermore, Nakano teaches that the glass fiber and other components may be added from a middle portion of an extruder, and that remaining components may be added after previous mixing and kneading of a part of the components. (see col 4 line 26-36) Selection of a mixing order is an obvious variation in the preparation of a composition. Particularly in the case of a fibrous or whiskerlike filler, it would be obvious to delay the addition of the inorganic filler as a second mixing step in order to prevent breakage and

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shortening of the fibers. Ex parte Rubin , 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.).

With regard to Claim 17, Maekawa teaches the composition can be molded into various molded products. (see par [0090])

With regard to Claim 18 and 19, Maekawa teaches that it is possible to obtain **any** shape of the molded product by varying the shape of the mold. (see par [0090]) Furthermore, the composition has good appearance, superior mechanical properties, and good fatigue resistance. (see par [0121]) Maekawa does not teach specifically kitchen, bath, toilet, or washroom products. Kudou teaches that a resin composition having good mechanical properties such as impact resistance and heat stability, (see par [0088]) in addition to good surface appearance obtained by the use of inorganic fillers such as wollastonite (see par [0062], [0063]) is suitable for use in a multitude of applications such as sinks, drains, an housing equipment (see par [0082],[0087]) It would be obvious to use the composition based on the combination of Maekawa, Nakeno, and Kuduo to generate molded articles such as sinks and other housing

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equipment, which is consistent with applicants wash bowl, hand-wash bowl, washroom product, kitchen product, or sink product.

With regard to Claim 20, Maekawa discloses that PTT may be obtained according to methods described in JP-A-51-140992, JP-A-5-262862, and JP-A-8-311177. (see par [0027]) Applicant refers to the same set of documents for instruction in generating the PTT. (see applicant's specification p. 12 par [0011]) The filler is treated with portion of the resin. (see the discussion with regard to claim 3) With the combination of Maekawa and Nakano, the epoxy and polycarbonate would be present in the composition, in ratios determined to be most appropriate for PTT specifically. (see the discussion with regard to claim 1) The hardness of the composition would be conferred by the PTT resin, the additional resins (epoxy and polycarbonate) used, and their content, and the type and mixing capabilities of the fillers. It is the examiner's position that the composition of Maekawa in view of Nakano and Kudou is substantially similar to applicant's claimed composition, and would inherently have substantially similar physical properties, including the hardness.

5. **Claims 4, 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Maekawa** in view of **Nakano et al.**, **Kudou et al.** and **Largman et al (US 4,403,052)**, with *evidence* provided by **MatWeb (ENC 1299)** (<http://www.matweb.com/>).

The discussion of **Maekawa, Nakano and Kudou**, above in **paragraph 3**, is incorporated here by reference.

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With regard to Claim 4, Maekawa teaches film forming agents including epoxy polymers for carrying out the surface treatment of the filler, (see par [0051], [0057]) but does not disclose their use not grafted on the filler. Nakano discloses the use of epoxy in the resin composition from 1-25 parts by weight for the purpose of improving moldability. (see col 1 line 49-55, 60, see discussion of claim 4, above in paragraph 3) Largman teaches a polyester composition which comprises a polyalkylene terephthalate, which is the same class of resin used by Maekawa. (see abstract) Largman provides additional motivation for including an epoxy compound, specifically Largman teaches that the polyester composition can include a polyepoxide up to 3% by weight of the polyester, which functions as a chain extender and helps compensate for broken polyester chains. (see col 5 line 10-15, 21) It would be obvious to include an epoxy in the composition based on the improved moldability suggested by Nakano and for the chain extending properties suggested by Largman. In both cases, the content suggested is within applicant's claimed range.

With regard to Claim 12, Largman teaches that the preferred polyepoxides are epoxy cresol novolac resins. (see col 5 line 18-19)

With regard to Claim 13, Largman teaches that the preferred epoxy cresol novolac resins are available under the trade designation ECN 1245, 1273, and 1299. (see col 5 line 19-20) ECN 1299 is a polyfunctional epoxy resin having about 3 epoxy groups per molecule. (see col 6 line 32-34) Matweb provides material notes for ECN 1273 and ECN 1299: The weight per epoxy, or grams/equivalent, for 1245, is 217 to

233, and 217 to 244, respectively, which is consistent with applicant's requirement for the novolac resin.

Response to Arguments

6. Applicant's arguments filed **8/28/08** have been fully considered. Specifically, applicant argues **(A)** all the elements of Claim 19 further define the products listed in previous Claim 18, **(B)** Claim 18 and 19 have been rendered clear and definite by the amendment of the phrase "a molded article" to the phrase "the molded article," **(C)** Matsumoto in view of Houck and/or Nexant does not disclose or suggest a polytrimethyl terephthalate present in the range of amended claim 1 because a maximum content of 50 parts of an aromatic polyester resin is taught, and the amended claim requires at least 70 parts, **(D)** Matsumoto in view of Watanabe fails to teach the elements of claims 18 and 19 because Watanabe teaches away from compositions above 70 weight percent, which is now required, and **(E)** Nakano in view of Houck and/or Nexant does not motivate the exchange of PET for PTT, specifically, because Nanko allows other kinds of monomers copolymerized in the PET, a change from PET to another compound would not be motivated.

With respect to argument **(A)** the objection is ***withdrawn in light of applicant's amendment*** including "a kitchen product" in the molded articles of claim 18. Support for this amendment is noted at paragraph [0035] of the specification.

With respect to argument **(B)**, the rejection is ***withdrawn in light of applicant's amendment*** reciting "the molded article."

With respect to arguments **(C), (D), and (E)**, applicant's remarks have been considered. The rejections are ***withdrawn in light of applicant's amendments to claim 1.***

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darcy D. LaClair whose telephone number is (571)270-5462. The examiner can normally be reached on Monday-Friday 8:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Darcy D. LaClair

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Examiner
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/DDL/

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796